



ENSURING ACCESS TO QUALITY
HEALTH CARE IN CENTRAL ASIA

TECHNICAL REPORT:

Summary of Results: Prices and Availability of Pharmaceuticals in Kazakhstan's Pharmacies

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December 2002
Almaty, Kazakhstan



FUNDED BY:
THE U.S. AGENCY FOR
INTERNATIONAL DEVELOPMENT



IMPLEMENTED BY:
ABT ASSOCIATES INC.
CONTRACT NO. 115-C-00-00-00011-00

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I. Acknowledgments

The authors wish to thank the pharmacists who provided the reported data. They wish to thank Sergey Muratov who collected and entered the data for the survey. In addition, the Director of the Regional Health Department, Kanat Ermikbayev and his staff provided invaluable support. The work was undertaken with the support of the USAID-funded ZdravPlus Project (implemented by Abt Associates Inc.).

II. Abstract

This technical report is a summary of the extensive pricing and availability survey done in Karaganda, Kazakhstan. That survey was detailed in the Survey on Prices and Availability of Pharmaceuticals in the Pharmacies of Karaganda City, Kazakhstan by Alexandr Gulyaev, Talgat Nurgozhin, Grace Hafner et al, available through the USAID/ZdravPlus Project. This article reports the results of a monitoring survey of prices and availability of 85 medications in 21 pharmacies of Karaganda City, Kazakhstan, which was conducted from December 2000 through May 2001. This survey was the result of a local government request and is being used to help inform policy decisions.

Kazakhstan's retail pharmacy market has been largely privatized since 1996, with no price controls in place. The pharmacy market in Kazakhstan itself is highly developed, with intense competition and many available products. This survey concentrated on drugs from the official essential drug list of the Republic of Kazakhstan, since this list comprises the most necessary and efficacious medications, which should cover at least 80 percent of common conditions.

III. Purpose

This technical report is a summary of the extensive pricing and availability survey done in Karaganda, Kazakhstan. That survey was detailed in the *Survey on Prices and Availability of Pharmaceuticals in the Pharmacies of Karaganda City, Kazakhstan* by Alexandr Gulyaev, Talgat Nurgozhin, Grace Hafner et al, available through the USAID/ZdravPlus Project.

IV. Executive Summary

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Kazakhstan's retail pharmacy market has been largely privatized since 1996, with no price controls in place. The pharmacy market in Kazakhstan itself is highly developed, with intense competition and many available products. This survey concentrated on drugs from the official essential drug list of the Republic of Kazakhstan, since this list comprises the most necessary and efficacious medications, which should cover at least 80 percent of common conditions.

There was reasonable availability of most indicator drugs, with the selected market basket of drugs available 60 percent of the time. Medication prices were generally higher when compared to international prices from the International Drug Price Indicator Guide. Four drugs were less than the international median price, 14 were 100-199 percent of the median, 21 were 200-499 percent of the international median and 10 drugs were more than 500 percent of the international median. Minimal changes in prices and availability occurred during the reviewed six-months. These higher prices have serious implications for the citizens of Kazakhstan since "most hospitals do not have budgets for drugs (except for essential drugs, donations and emergency supplies) and it has become common practice to ask patients to buy their

own drugs. Outpatients in most NIS (Newly Independent States) - have to pay for their drugs themselves....”¹

Prices for brand and generic medications often have wide variation in price and consumers need to be encouraged to purchase low cost generic products, as they become more available. Strategies to remove barriers to encourage generic use need to be developed and implemented.

Changes that were introduced as a result of this survey included a new Drug Formulary for the Oblast, development of a Drug Information Center which will include on-going price monitoring as one of its activities, and local interest in development of new treatment guidelines that can take into account prices of the medications.

V. Introduction

Kazakhstan, the second largest country in the former Soviet Union, is now an independent country largely covered by steppe. It covers a huge territory, nearly the size of Western Europe. The population estimate in 1997 was 15.7 million people. More than 30 percent of the population is under the age of 15. The breakup of the Soviet Union has severely disrupted the economy, which along with concomitant societal disintegration has resulted in widespread unemployment and low incomes. This has serious consequences for the health of the population, since their capacity to pay for health services including pharmaceuticals is severely reduced. According to a World Bank funded National Living Standards Survey, over 30 percent of the Kazakhstan population had incomes below the poverty line (a subsistence minimum) in 1996. The workforce monthly average salary was \$125, in 1998. Low level health sector workers however may earn only half as much.

The European Observatory 1999 report on the Republic of Kazakhstan (ROK) gives an excellent description of the pharmaceutical situation in the country. “The pharmaceutical distribution industry has mostly been privatized and the state company, Pharmacia, dismantled. There are now ten large wholesale companies and hundreds of small distribution companies. More than 90 percent of pharmacies are privatized, having been sold annually at auction since 1995. There was considerable disruption in supplies after independence in 1991 and the country still has a serious shortage of drugs. Over 95 percent of drugs are imported and many more are smuggled into the country. The government wishes to develop domestic production. Various efforts have been made to establish a Kazakh medical-pharmaceutical industry to decrease the dependency of the republic on imports. Pharmaceuticals expenditure accounts for a low proportion of the state health budget (10 percent in 1997) compared to well over that in most European Union countries. This proportion is low because many patients must purchase their own drugs including inpatients, although the official policy is that these should be supplied by the hospital. Under the Soviet health care system, drugs were freely available and their use was encouraged. There was a very long list of drugs but many were not identifiable under international categories. An approved list of essential drugs was drawn up in 1995 by the Committee of Health, based on WHO categories, listing 290 items in 1998. There is no state regulation of the drugs that can be imported and sold, with the exception of the essential drugs list, so that a great variety of drugs are available.”²

Rational pharmacotherapy is dependent on the availability of pharmaceuticals, not only physical access, but affordability to the population. Considerable concern on the part of Kazakh policy makers about this issue was the impetus for this extensive survey in Karaganda City, Kazakhstan, which is also a pilot site of the USAID-funded ZdravPlus Project. The data collected is aimed at informing drug policy and further

¹ Menabde, N, Stobbelaar *The Patient in Focus: A Strategy for Pharmaceutical Sector Reform in Newly Independent States* World Health Organization, 1998: 2-9

² European Observatory on Health Care System *Health Care Systems in Transition. Kazakhstan* 1999: 10-12,15,55,56

contributing to the implementation of essential drug lists and drug formulary systems. It can also help in deciding if any corrective action on drug prices is needed. This report compiles the results of surveys conducted monthly, from December 2000 through May 2001. It also complements the comprehensive “Karaganda Oblast, Kazakhstan, Pharmaceutical Sector Assessment”, May 2000, conducted by the USAID RPM Project (Management Sciences for Health).

VI. Methods

The two components of the study were: 1) Monitoring of physical availability of essential drugs; and 2) Monitoring of prices of essential drugs. This work was undertaken from December 2000 to May 2001 in pharmacies of Karaganda City.

Twenty-one pharmacies were randomly selected for the study. These included eleven pharmacies situated in the center of Karaganda City, and ten pharmacies located in Yugo-Vostok, one of the largest suburbs of the city. Among the pharmacies, there was one state-owned pharmacy; one belonging to the Institute of Phytochemistry; and the rest were privately owned.

Trained surveyors collected the data every month. The surveyors were either doctors or pharmacists. The information on availability and prices of the medications, in the local currency, Kazakh tenge, was identified through questioning of the pharmacist or pharmacy worker.

A total of 85 generic drug names were chosen for the survey, though not all medications were surveyed each month. Drugs were chosen to represent major therapeutic groups. Sixty medications were selected from the current Essential Drug List (EDL) of the Republic of Kazakhstan (ROK). In December and in May, price/availability was investigated for all medications from the list of 60 drugs. Each month from January to April, twenty drugs out of the 60 were surveyed; January, the first twenty; February the second twenty, March the last twenty, and in April, the first twenty again. During the last three months of data collection, 25 additional medications were collected, which were selected from an international pricing methodology project. Information on all brand and generic names of each surveyed medication available in the pharmacy was collected; all were of the same strength and the same dosage forms.

A cost calculation per unit was made. A unit was defined as a tablet/capsule, an ampule, a vial, or gram of ointment; in tenge and in US dollars (the exchange rate for the entire time of study was \$1= 147 tenge). After this, the median, minimum and maximum prices for all formulations of each drug were identified; the ratio between maximum and minimum prices, as well as a comparison between the median prices collected with the international median prices per medication unit was made. International median prices were taken from the *International Drug Price Indicator Guide (1998)*, produced by MSH and the World Bank. This guide “provides exactly what the name implies- an indication of generic drug prices on the international market”³. The guide includes non-profit suppliers and international procurement agencies, and would be expected to be lower than the prices surveyed in Karaganda, which were retail prices.

VII. Results

A. Availability

The availability of indicator drugs in the Karaganda pharmaceutical market can be seen in summary in Table 1.

Table 1: Drug Availability in Pharmacies of Karaganda City, December 2000 and May 2001

Percent (%) of pharmacies in which the named drug was available					
100≤80	80≤60	60≤40	40≤20	20≤1	0%
acetylsalicylic acid	verapamil	propranolol	acyclovir	rifampicin	simvastatin
ampicillin	indomethacin	atenolol 50mg	digoxin	amitriptyline	rifampicin/isoniazid
drotaverine	rehidron (oral rehydration powder)	benzathinebenzylpenicillin	nalidixic acid	beclomethasone	lamivudine/zidovudine

metronidazole	isosorbide dinitrate	ergocalciferol	diphenylhydramine	diazepam	celecoxib
nitroglycerin short-acting	prednisolone	vitamin A	heparin	azithromycin	fluoxetine
paracetamol	gentamicin	levonorgestrel/ethinyl estradiol (Rigvidon)	nitroglycerin long acting	fluconazole	mefloquine
furosemide	salbutamol	Theophylline	cimetidine	acyclovir	
ciprofloxacin 250mg	nifedipine	Bismuth	amoxicillin	amitriptyline	
papaverine	cefazolin	mebendazole	clonidine	atenolol 25mg	
bromhexine	captopril	chloramphenicol	diclofenac	ceftriaxone inj.	
tetracycline ointment	betamethasone	ferrous sulfate	hydrochlorothiazide	nevirapine	
senna	erythromycin	folic acid	ibuprofen		
ascorbic acid	phenoxymethylpenicillin	sulfadimezine			
co-trimoxazole 480mg	amiodarone	nystatin			
doxycycline	glibenclamide	ciprofloxacin 500mg			
omeprazole	omeprazole	ranitidine			
spironolactone	contraceptive, fixed combination				
	nifedipine				
	co-trimoxazole 120mg				

In general, there was extensive availability of low priced generic antimicrobials, such as ampicillin, metronidazole, gentamicin, tetracycline, doxycycline and co-trimoxazole. While there is legislation prohibiting the sale of antimicrobials without prescription³, it is common practice for these drugs to be sold freely to the public. There was limited availability of newer more expensive antibiotics such as azithromycin, and ceftriaxone. Amoxicillin was only available 20-40 percent of the time. There was also 80-100 percent availability of the fluoroquinolone, ciprofloxacin. There was great availability of over-the-counter drugs (OTC drugs) such as acetylsalicylic acid, ascorbic acid, papaverine, drotaverine, paracetamol, nitroglycerin, and senna, which are known to be quite popular with consumers. Captopril, a cardiovascular drug, was available 60-80 percent of the time. Drugs notable for low availability include commonly used antidepressants such as amitriptyline. Ibuprofen, a NSAID, was only available 20-40 percent of the time despite its anecdotal popularity.

Some of the drugs collected from the international list of 25 such as the combination medication rifampicin/isoniazid were not available at all. Celecoxib and mefloquine were not registered. Fluoxetine and simvastatin were not available though both were registered.

One measure of patients' access to drugs is whether the patient can actually find the medication when she goes to her usual pharmacy, most likely located near her home or health facility. Table 2 shows the average availability of the same market basket of 60 drugs, in December 2000 and May 2001. In Karaganda City, looking at average performance of the pharmacies, it may be seen that patients can find more than 60 percent of the market basket of drugs in 10 out of 18 pharmacies. Three pharmacies could provide less than 50 percent of the market basket of drugs at any time. One of the pharmacies during the

³ Decree of the Committee of Health of Republic of Kazakhstan, March 5, 1999, #118

entire six months was significant for not being able to provide more than 30 percent of the list. The availability of drugs between December 2000 and May 2001 varied substantially. One pharmacy improved performance from 43 percent to 60 percent availability while another declined from 73 percent to 43 percent. Fifteen of the eighteen pharmacies varied by more or less than 15 percent regarding their drug availability during this six month period.

Table 2: Availability of Drugs in Karaganda Pharmacies December 2000 - May 2001

Nº	Name	December 2000 Percent	May 2001 Percent	Average availability Percent	Difference in performance, between Dec-May Percent
1	Private Pharmacy 1	77	77	77	0
2	Private Pharmacy 2	78	73	76	-5
3	Private Pharmacy 3	77	65	71	-12
4	Private Pharmacy 4	73	67	70	-7
5	Private Pharmacy 5	68	70	69	2
6	Private Pharmacy 6	63	65	64	2
7	Private Pharmacy 7	60	67	63	7
8	Public Pharmacy 1	72	55	63	-17
9	Private Pharmacy 8	60	65	63	5
10	Private Pharmacy 9	65	55	60	-10
11	Private Pharmacy 10	60	58	59	-2
12	Private Pharmacy 11	60	58	59	-2
13	Private Pharmacy 12	57	60	58	3
14	Private Pharmacy 13	73	43	58	-30
15	Private Pharmacy 14	43	60	52	17
16	Private Pharmacy 15	42	53	48	12
17	Private Pharmacy 16	52	40	46	-12
18	Private Pharmacy 17	30	35	33	5
19	Private Pharmacy 18	42	Closed		
20	Private Pharmacy 19	62	Closed		
21	Private Pharmacy 20	N/A-opened 2001	55		

B. Prices

For the six months, the authors calculated the median, minimum and maximum prices for each drug, identified the ratio between the minimum and the maximum prices and also compared the median prices with international wholesale median prices for each drug. Prices for 49 of the 60 total drugs from December and May were reviewed. When considering the average prices during the six-month time period, one can identify several typical groups that are presented in Table 3.

Table 3: Median Drug Prices in Karaganda, compared to International Median, Average of December 2000 and May 2001

Median drug prices, in Karaganda compared to international median (MSH) December 2000 – May 2001 *							
Less than international median prices		100-199%		200-499%		More than 500-700%	
	%		%		%		%
Ciprofloxacin	19	Ascorbic Acid	117	Nystatin	204	Phenoxymethylpenicillin	567
Bromhexine	29	Tetracycline ointment	128	Ergocalciferol	214	Oral Rehydration salts (Rehidron)	574
Papaverine	54	Salbutamol	131	Cefazolin	227	Amoxicillin	644
Propranolol	74	Ampicillin	133	Acetylsalicylic	229	Amitriptyline	661

				Acid			
		Gentamicin	137	Prednisolone	231	Benzathinbenzylpenicillin	672
		Vitamin A	142	Captopril	239	Diazepam	830
		Nifedipine	153	Theophylline	247	Metronidazole	883
		Chloramphenicol	160	Sulfadimezine	249	Hydrochlorthiazide	1130
		Furosemide	178	Heparin	253	Mebendazole	3964
		Verapamil	180	Spirolactone	256	Acyclovir	6803
		Erythromycin	186	Nalidixic acid	276		
		Betamethasone	189	Paracetamol	322		
		Diphenylhydramine	192	Doxycycline	333		
		Rifampicin	194	Cimetidine	343		
				Betametasone	346		
				Folic Acid	354		
				Glibenclamide	356		
				Atenolol	406		
				Indomethacin	420		
				Digoxin	428		
				Co-trimoxasole	489		

There were only four drugs with prices lower than the international median, all of which are available generically and have been used in Kazakhstan since before perestroika. There were 14 out of 49 drugs (29%) which were 100-199 percent higher than the international median; 21 of 49 drugs (43%) which were 200-499 percent higher; and 10 of 49 drugs (20%) which were quite a bit higher, at 500-700 percent.

The survey also shows that there is a wide price range for most of the drugs. The range of prices for the medications with the same name in different pharmacies is not as great, though it always exists. Much more dramatic is the range of prices of medications sold under different brand names, such as isosorbide dinitrate, verapamil, and nifedipine. These show the most dramatic differences between the minimum and the maximum prices, more than 4-8 times.

Table 4: Comparison of Generic and Brand name Prices, Karaganda 2001

Generic name of drugs	Brand name of drugs	Generic Price \$	Brand Price \$	Brand / Generic name price ratio
Verapamil	Isoptin	0,0190	0,0808	4.3
Nifedipine	Corinfar	0,0163	0,0862	5,3
Isosorbide dinitrate	Cardicet	0,0068	0,0578	8,5

Table 5 looks at the stability of prices between December and May. It may be seen that during a six month period in Karaganda, the prices for 11 drugs (19%) increased by 5-35 percent. At the same time there was a 5-20 percent decrease in prices noted for 17 drugs (30%) and a more than 20 percent decrease for five drugs. For 24 drugs (42%), prices varied by less than ± 5 percent during period.

Table 5: Trends (Dynamics) of Drug Prices from December 2000, Compared to May 2001

Prices which decreased from December		Prices which stayed +5 % or -5% from December	Prices which increased from December	
-60% \leq -20%	-20% \leq -5%	-5% to +5%	5 % \leq 20%	20% \leq 35%
amoxicillin	paracetamol	bismuth	acetylsalicylic acid	ascorbic acid
ferrous sulfate	vitamin A	folic acid	chloramphenicol	acyclovir
senna	cefazolin	omeprazole	erythromycin	heparin
indomethacin	ampicillin	bromhexine	cimetidine	
diphenhydramine	nitroglycerin long acting	metronidazole	nitroglycerin short -acting	

	sulfadimezine	hydrochlorthiazide	nystatin	
	doxycycline	betametasone	tetracycline ointment	
	rifampicin	drotaverine	ergocalciferol	
	gentamicin	atenolol		
	amiodarone	verapamil		
	glibenclamide	captopril		
	Benzathinbenzyl- penicillin	spironolactone		
	propranolol	phenoxymethylpenicillin		
	nifedipine	co-trimoxazole		
	clonidine	prednisolone		
	ciprofloxacin	salbutamol		
	mebendazole	digoxin		
		furosemide		
		nalidixic acid		
		theophylline		
		oral rehydration salts		
		levonorgestrel & ethinyl estradiol		
		amitriptyline		
		papaverine		

VIII. Discussion

This survey demonstrated that there is fairly high availability of pharmaceuticals in the Karaganda City pharmacies. There are specific interesting influences on availability in the Karaganda market that may affect the results of the survey and should be considered in reviewing the results and proposing policy options.

First, it is recognized that recommendations of health workers (doctors, pharmacists) influence demand. Many health care workers as well as teachers of medical schools were trained before the transition, when the Soviet market was quite limited. Now, there are contradictory developments - more new drugs are available and there is less information⁴. It may be that the low availability of relatively new antibiotics such as azithromycin and ceftriaxone can be attributed to the health workers simply not recommending them, thus decreasing demand. Lack of prescriber knowledge also may be seen in the prevalence of ampicillin over amoxicillin, despite international recognition of the advantages of amoxicillin.

The absence of simvastatin, a cholesterol-lowering agent reflects low demand for this drug not only because of the fact that treatment of high cholesterol is costly but also because local practitioners are not knowledgeable enough about using statins in therapy, nor is there adequate laboratory support for cholesterol testing.

The absence or low availability of antidepressants is probably related to outdated Soviet-era practice that restricts psychiatry treatment to special facilities, as well as limiting the sale of antipsychotics and antidepressants to specially licensed government pharmacies. These regulations also influence the availability of diazepam. Primary health care prescribers are unfamiliar with treatment of common disorders like depression, and do not attempt to treat it, so there is reduced demand and low availability.

⁴ Menabde, N, Stobbelaar The Patient in Focus: A Strategy for Pharmaceutical Sector Reform in Newly Independent States World Health Organization 1998: 2-9

A second reason affecting availability in the positive direction may be the intense marketing of certain modern expensive pharmaceuticals in the region directly to consumers. In general, products from the West are perceived favorably in terms of quality and desirability. Thus direct advertising to the consumers, through the media, may increase their willingness to purchase new medications, accounting for continued availability. In many cases patients cannot afford to go to the doctors and choices are not based on professional advice.⁵ This would be of grave concern, especially considering the world-wide emergence of antibiotic resistance, which may be attributed partially to free sale of antibiotics. However, this survey did not collect data on actual sales, which would give some further clarification on consumer preference.

A third reason may be related to issues with the choice of indicator drugs used for the survey. Some drugs were not registered yet were still surveyed. This was to contribute to an on-going international study. It was also an opportunity to verify that unregistered drugs and drugs which are strictly forbidden for sale in the pharmacies are actually not available in the pharmacy. There are allegations in the region that there is a wide-influx of unregistered medications coming over the Russian and Chinese borders. Tuberculosis drugs such as rifampicin/isoniazid combination are not supposed to be sold in pharmacies, according to local regulations⁶. This survey shows that this new regulation seems to be enforced, while other regulations⁷ controlling sale of many other drugs is not enforced, except for highly controlled drugs such as amitriptyline and diazepam. The surveyor did not actually try to purchase the drugs however, so the possibility of some drugs being offered only after “request” must be considered. Of great concern also is the fact that surveyed drugs selected from the Essential Drug List of Kazakhstan do not seem to be in great supply. The pharmacy shelves are stacked to the ceilings with medications yet the essential drugs which have been surveyed here are not fully available.

The survey showed that prices of pharmaceuticals were generally higher when compared to international prices. Four drugs were less than the international median price, 14 were 100-199 percent of the international median, 21 were 200-499 percent of the international median and 10 drugs were more than 500 percent of the international median.

In terms of affordability of price to the consumers, it was calculated that a course of the antibiotic doxycycline in generic form (20 capsules) would cost the consumer \$0.884. This might be considered affordable despite the widespread low incomes. A one-month treatment with the cardiac medication nifedipine (90 capsules) would cost \$7.76 if using the brand name, but only \$1.47 if using the generic. Recommendation of the brand name by the doctor or health worker might then be a significant barrier to individuals with extremely low income such as health workers who make only \$30 a month. It also points out the importance of promotion of lower-priced generics in this market.

It is difficult to explain the reasons for the interesting trends in prices decreasing from December to May. However, a factor that potentially may have influenced the price decrease was the inception of the essential drug list/formulary system for the oblast health department, and current development of hospital level formularies, which consider pricing.

This survey has some policy implications. There had been considerable discussion in the Karaganda government about the need to introduce price controls for pharmaceuticals. This survey did not provide evidence supporting this approach. Drug prices were generally stable and the variation between maximum and minimum prices demonstrated that generic products could be purchased at low prices. It should be considered that if price controls were implemented, availability, which is now at 60 percent, might decrease.

⁵ Ibid.

⁶ Decree of the Committee of Health of Republic of Kazakhstan, March 5, 1999, #118

⁷ Decree of the Ministry of Health of RK “On Regulating of Drug Prescription and Drug Sale and Delivery to Population,” Almaty, October 30, 1995, # 455

There may be a need for an education campaign to encourage consumers to “shop around” and to purchase generic products where possible. Yet in the region, “quality control and inspection capacity is unsatisfactory”.⁸ However, if the generics are perceived to be of lower quality, a two pronged effort would be needed. First, it is necessary to verify the quality of the generics, and if merited, to help promote the quality of those drugs. Policies might be introduced requiring the use of generics when possible for all publicly funded medications. Regulations, which currently inhibit the registration of generics, may also need to be reviewed. For example, the \$3,000 registration fee for new drugs is required for both branded and generic drugs and may be a barrier to registration of generics, which may have lower profit margins.

Changes that were introduced as a result of this survey included a new Drug Formulary for the Oblast, development of a Drug Information Center, which will include on-going price monitoring as one of its activities, and local interest in development of new treatment guidelines that can take into account prices of the medications. The Drug Information Center also is working on educating health professionals and consumers about the many new drugs that are now available in the market. The pricing and availability database is currently being used to calculate costs of treatment in-hospital for 300 conditions. Further plans include extending this survey to other parts of the country.

IX. Conclusion

Kazakhstan has transitioned from a state monopoly to a fully privatized pharmacy system. Availability has increased though prices are high when compared to international prices. Pharmaceutical pricing is a derivative of various policies; deciding how much to charge for a particular drug is not a simple process⁹. Given the complex issues involved, this survey does not substantiate the need to implement price controls. The survey demonstrated that there was wide variation in price between brand and generic medications and consumers need to be encouraged to purchase low cost generic products, as they become more available. Some review of current registration practices as well as ensuring quality may be in order to remove barriers to wide use of generics.

⁸ Decree of the Ministry of Health of RK “On Regulating of Drug Prescription and Drug Sale and Delivery to Population,” Almaty, October 30, 1995, # 455

⁹ Wertheimer A, Grumer S. Overview of International Pharmacy Pricing. *PharmacoEconomics* 2 (6), (1992): 449-455